

## REMARKS

### The Rejection under 35 U.S.C. §112

The rejection of claims 11-36 under 35 U.S.C. §112, first paragraph, is respectfully traversed. The Office Action alleges that claim 11 does not have support in the specification because there is no teaching of selecting the ratio of the dielectric anisotropies of the liquid-crystal medium parallel and perpendicular to the director to be less than or equal to 1.93.

Applicants re-emphasize their position that the ratio of the dielectric anisotropies of the liquid-crystal medium parallel and perpendicular to the director being less than or equal to 1.93 is supported by the original disclosure and by the inherent properties of the composition examples in applicants' disclosure. The original disclosure states that "the dielectric constant perpendicular to the molecular axis ( $\epsilon_{\perp}$ ) must thus be as large as possible." See page 3, lines 27-28. A larger  $\epsilon_{\perp}$  equates to a smaller ratio of  $\epsilon_{\parallel}/\epsilon_{\perp}$  since  $\epsilon_{\perp}$  is the denominator in the ratio. In the Office Action it is argued that a larger  $\epsilon_{\perp}$  equates to a smaller ratio of  $\epsilon_{\parallel}/\epsilon_{\perp}$  only when the  $\epsilon_{\parallel}$  is constant. In fact, it is not necessary that  $\epsilon_{\parallel}$  remain constant for the ratio to be lowered by increased  $\epsilon_{\perp}$ ; it is only necessary that  $\epsilon_{\parallel}$  not increase in the same or higher proportion as  $\epsilon_{\perp}$ . Further, one of ordinary skill in the art reading applicants' disclosure would clearly be conveyed the concept that, since an increased  $\epsilon_{\perp}$  is desired, that a lower ratio of  $\epsilon_{\parallel}/\epsilon_{\perp}$  is desired. This is also verified by the data for the ratio of  $\epsilon_{\parallel}/\epsilon_{\perp}$  in the specific examples. The  $\epsilon_{\parallel}/\epsilon_{\perp}$  ratio is an inherent property of each of the mixtures disclosed in the examples. Such would be clearly recognized by one of ordinary skill in the art since the  $\epsilon_{\parallel}$  and  $\epsilon_{\perp}$  values are inherent in all liquid crystal mixtures and, thus, their ratio is an inherent property in all liquid crystal mixtures. Those inherent properties were determined in the Declaration under 37 C.F.R. § 1.132 of Dr. Heckmeier. One of ordinary skill in the art could

have easily made such determinations in the same manner at the time of the invention. Of the 14 examples, 2 have a ratio of 1.93 and all but 2 of the others have a lower ratio. Thus, the inherent ratio properties of the examples provide support for the embodiment wherein the ratio is 1.93 or less. The "or less" part being further supported by the general desire indicated in the disclosure of a high  $\epsilon_{\parallel}$  value, as discussed above. An inherent property of a composition can properly support a claim recitation even if it is not literally recited in the original disclosure; see, e.g., Kennecott Corp. v. Kyocera International Inc., 5 USPQ2d 1194, 1198 (Fed. Cir. 1987) Ex parte Cure, 215 USPQ 567 (POBA 1982).

The Office Action cites the In re Rossi and In re MacDonald decisions for the proposition that when patentability over a reference due to some advantage is argued, the advantage must be disclosed in the specification. Applicants submit, in response, that the advantage of the  $\epsilon_{\parallel}/\epsilon_{\perp}$  ratio property in the claims is disclosed in the specification. In accord with the Kennecott v. Kyocera and Ex parte Cure, decisions cited above, this disclosure is not literally recited but is an inherent property of the compositions which are disclosed in the specification. The disclosure of the compositions provides an inherent disclosure of the properties thereof, thus, the ratio recitation is disclosed through the disclosure of the compositions. The Rossi and MacDonald decisions do not preclude the situation wherein the advantage is inherently disclosed and the sufficiency of inherently disclosed properties has been clearly upheld in more recent case law. See, e.g., TurboCare v. General Electric, 60 USPQ2d 1017 (Fed. Cir. 2001); and, Tronzo v. BioMet, 47 USPQ2d 1829, 1834 (Fed. Cir. 1998).

For all of the above reasons, it is urged that claims are adequately described and the rejection under 35 U.S.C. §112 should be withdrawn.

### The Rejection under 35 U.S.C. §103

The rejection of claims 11-36 under 35 U.S.C. §103, as being obvious over Kondo (U.S. Patent No. 6,210,761) is respectfully traversed.

Kondo provides no teachings or suggestions of a medium according to applicants' invention which has at least one compound of each of applicants' formulae I and II and which has a positive dielectric anisotropy of 3.2 or more, a birefringence,  $\Delta n$ , of less than or equal to 0.11, and the ratio of the dielectric anisotropies of the liquid-crystal medium parallel and perpendicular to the director is less than or equal to 1.93.

Kondo generically discloses a number of formulae for the possible components of its compositions. Some of those formulae generically encompass compounds of applicants' formula I and some generically encompass compounds of applicants' formula II. Also, some of the examples include compounds falling within applicants' formula I and some include compounds falling within applicants' formula II. But none of the 22 composition examples of Kondo include both compounds of applicants' formula I and applicants' formula II.

Further, Kondo discloses that compositions which exhibit a negative dielectric anisotropy,  $\Delta\epsilon$ , are one objective of their invention; see, e.g., col. 1, lines 32-38, and col. 2, lines 10-14. Correspondingly, the compositions of Examples 2-13 of Kondo exhibit negative dielectric anisotropy. Not coincidentally, these are the only compositions of Kondo which contain a compound meeting applicants' formula II. Accordingly, applicants respectfully submit that Kondo does not fairly suggest to one of ordinary skill in the art a composition which, both, exhibits "a positive dielectric anisotropy of 3.2 or more" and includes a compound which meets applicants' formula II. Kondo only suggests to one of ordinary skill in the art compositions which include a compound meeting applicants' formula II for its embodiments which are negative dielectric anisotropy compositions.

Examples 25 and 26 of Kondo, which test Composition Examples 20 and 21, are pointed to in the Office Action as being closest to the present claims. This assertion is presumably made because these compositions exhibit a  $\Delta\epsilon$  above 3.2 and a  $\Delta n$  of less than 0.11. However, the compositions evaluated in these examples do not contain any compound which is within or similar to the compounds of applicants' formula II. Thus, these compositions meet the properties only through the use of compounds different than those required by the instant claims. There is no suggestion therefrom of a composition which both meets the properties recited in the instant claims and meets the compounds required in the instant claims.

Regarding the recitation in the claims that the ratio of the dielectric anisotropies of the liquid-crystal medium parallel and perpendicular to the director is less than or equal to 1.93, Kondo is completely silent. Further, the Office Action does not even address this claim recitation in the context of the 35 U.S.C. §103 rejection. There is a dispute whether such language is supported by the disclosure (see the 35 U.S.C. §112 issue discussed above). But, even if there is such a dispute, the 35 U.S.C. §103 rejection must address all claim limitations. The reference does not support a 35 U.S.C. §103 rejection if it does not disclose or suggest all claim elements. Even if propriety of a claim element is challenged on other grounds, such does not warrant ignoring such element in supporting a 35 U.S.C. §103 rejection. Kondo provides no suggestion at all of a composition having such property and, thus, cannot render obvious the instant claims under 35 U.S.C. §103.

As further proof that Kondo does not suggest (or inherently meet) compositions having a ratio of the dielectric anisotropies of the liquid-crystal medium parallel and perpendicular to the director less than or equal to 1.93, applicants again refer to the previously submitted 37 C.F.R. § 1.132 declaration of Dr. Heckmeier. Therein, two

representative examples of Kondo were compared and it was shown that they do not meet the recitation in applicants' claims of the ratio of the dielectric anisotropies parallel and perpendicular to the director.

It is submitted that the claims are in condition for allowance. However, the Examiner is kindly invited to contact the undersigned to discuss any unresolved matters.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,



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